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# Stratiomyidae (Diptera) Fauna and Zoogeographic Evaluation of Gevne Valley (Konya-Hadim) in Turkey

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**HIGHLIGHTS**

- Stratiomyidae fauna have been determined in the Gevne Valley (Konya, Hadim-Taşkent), Turkey.
- 11 species from the family Stratiomyidae were identified.
- *Stratiomys ruficornis* (Macquart, 1838) is recorded for the first time from the Gevne Valley.
- The Gevne Valley was evaluated from a zoogeographical point of view.

**Abstract**

This study presents the fauna of Stratiomyidae from the Gevne Valley (Konya, Hadim-Taşkent), Turkey, collected between 2019-2020. *Chloromyia speciosa* (Macquart, 1834), *Oplodontha viridula* (Fabricius, 1775), *Oxycera meigenii* Staeger, 1844, *Oxycera quadrilineata* Üstüner and Hasbenli, 2007, *Pycnomalla splendens* (Fabricius, 1787), *Stratiomys cenisia* Meigen, 1822, *Stratiomys chamaeleon* (Linnaeus, 1758) and *Stratiomys ruficornis* (Macquart, 1838) are recorded for the first time from the Gevne Valley. The distribution of the species in the Palaearctic Region is discussed. Photographs of all species are presented.

**Keywords:** Gevne Valley, Stratiomyidae, Fauna, Zoogeography, Distribution, Türkiye

## 1. Introduction

The Gevne Valley is in the transition zone of the Mediterranean Region and Central Anatolia Region, within the borders of Alanya-Hadim districts. The Gevne Valley, which is within the scope of Important Natural Areas (KBA) criteria, contains Juniper communities, maquis and pioneer scrub communities, riverside plant communities, rocky plant communities, black pine (*Pinus nigra* ssp. *pallasiana*), red pine (*Pinus brutia*) and Taurus fir (*Abies cilicica* ssp. *isaurica*) forests, deciduous and mixed coniferous consists of forests, high alpine meadows, steppes and agricultural lands.

Stratiomyidae is a medium- to large-sized fly family, with around 2,800 species in the world and around 450 in the Palearctic Region (Woodley 2001). So far, 71 species belonging to 18 genera in seven subfamilies have been identified from Turkey. Until now, only five species (*Adoxomyia aureovittata* (Bigot 1879), *A. begreliensis* (Üstüner 2012), *A. cinerascens* (Loew 1873), *A. palaestinensis* (Lindner 1937), *A. sarudnyi* (Pleske 1903)) known from the Gevne Valley (Üstüner and Hasbenli 2011; Üstüner 2012). Until today, a detailed

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faunistic study of the family has not been conducted in Gevne Valley. In addition, the fact that it is in the transition zone between the Mediterranean climate and the continental climate, it acts as a refugium (shelter), which makes the valley very interesting in terms of biological diversity.

## 2. Materials and Methods

A total of 53 stratiomyids, 21 males and 32 females, were collected from Gevne Valley between the years of 2019 and 2020 (Fig.1). Stratiomyide specimens were captured with an entomological net, then sacrificed in jars containing ethyl acetate and pinned. Their diagnosis was made based on relevant literature. Photographs of each species were taken. The material is now housed at the Selçuk University, Faculty of Science, Department of Biology.

**Figure 1.** Different habitats in the Gevne Valley

## 3. Results

As a result of the evaluation of these samples collected at the Gevne Valley (Alanya- Hadim-Taşkent) in 2019-2020, 11 species were identified belonging to the genera: *Adoxomyia*, *Pycnomalla* (Clitellariinae), *Lasiopa* (Nemotelinae), *Chloromyia* (Sarginae) and *Oxycera*, *Oplodontha* and *Stratiomys* (Stratiomyinae). The list with all specimens and species found is presented below.

This section may be divided into subheadings. It should provide a concise and precise description of the experimental results, their interpretation, as well as the experimental conclusions that can be drawn.

*3.1.1. Stratiomyidae*

*3.1.1. Clitellariinae*

*3.1.1.1. Adoxomyia Kertész, 1907*

*3.1.1.1.1. Adoxomyia aureovittata* (Bigot 1879)

*Material Examined*: Turkey: 1 ♂, Konya, Hadim, Beyreli Village, Gevne Valley, elev. 1450 m, 19.V 2019 (Fig.2.1; Fig.3.15).

*Distribution in Turkey*: Konya (Hadim and Taskent districts) (Üstüner and Hasbenli 2011).

*General Distribution*: Palearctic Region: Greece, Turkey (Alexiou et al. 2020; Üstüner and Hasbenli 2011).

*3.1.1.1.2. Adoxomyia obscuripennis* (Loew 1873)

*Material Examined*: Turkey: 1♂, 1♀, Konya, Hadim, Beyreli Village, Gevne Valley, elev. 1450 m, elev. 20.VI 2019 (Fig.2.2,3; Fig.3.16,17).

*Distribution in Turkey*: Konya-Hadim district (Üstüner and Hasbenli 2011).

*General Distribution*: Palearctic Region: Kazakhstan, Russia, Tajikistan, Turkey, Uzbekistan (Kertész 1908; Kertész 1923; Pleske 1925a; Lindner 1938; Rozkošný 1983; Nartshuk 1988; Rozkošný and Nartshuk 1988; Üstüner and Hasbenli 2011; Woodley 2001).

*3.1.1.2. Pycnomalla Gerstaecker, 1857*

*3.1.1.2.1. Pycnomalla splendens* (Fabricius, 1787)

*Material Examined:* Turkey: 1♂, Konya, Hadim, Beyreli Village, Gevne Valley, elev. 1450 m, 06.VI 2020 (Fig.2.4; Fig.3.18).

*Distribution in Turkey*: Adana, Bitlis, Erzurum, Karaman, Kars, (Kemal and Koçak 2013; Demirözer et al. 2017; Üstüner et al. 2002).

*General Distribution*: Palearctic Region: Algeria, Armenia, Morocco, Israel, Portugal, Spain, Tunisia, Turkey (Kertesz 1908; Pleske 1925a; Séguy 1926; Lindner 1931, Lindner, 1938; Lindner 1974; Rozkošný 1983; Rozkošný and Nartshuk 1988; Woodley 2001; Üstüner et al. 2002).

*3.1.2.* Sarginae

*3.1.2.1. Chloromyia* Duncan, 1837

*3.1.2.1.1. Chloromyia speciosa* (Macquart, 1834)

*Material Examined*: Turkey: 2♀♀, Konya, Hadim, Beyreli Village, Gevne valley, elev. 1450 m, 02.VII 2019. 1♀, Konya, Hadim, Beyreli Village, Gevne Valley, elev. 1450 m, 08.VI 2020 (Fig.2.5; Fig.3.19).

*Distribution in Turkey*: Artvin, Bursa, Erzurum, Hatay, Ordu, Rize (Demirel and Üstüner 2019; Demirözer et al. 2017; Rozkošný 1982; Hurkmans et al. 1997).

*General Distribution*: Palearctic Region: Algeria, Austria, England, Bulgaria, Czech Republic, France, Greece, Germany, Italy, Morocco, Poland, Portugal, Russia, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, Yugoslavia (Lindner, 1938; Rozkošný 1982; Rozkošný and Nartshuk 1988; Woodley 2001).

*3.1.3.* Stratiomyinae

*3.1.3.1. Oxycera* Meigen, 1803

*3.1.3.1.1. Oxycera meigenii* Staeger, 1844

*Material Examined*: Turkey: 1♀, Konya, Taskent, Beyreli Village, Gevne Valley, elev. 1450 m, 06.VII 2019 (Fig.2.6; Fig.3.20).

*Distribution in Turkey*: Ankara, Alanya, Bayburt, Erzurum, Isparta, Kayseri, Konya, Sivas (Demirözer et al. 2017; Üstüner et al. 2002; Üstüner 2005; Üstüner andHasbenli 2013).

*General Distribution*: Palearctic Region: Afghanistan, Austria, Azerbaijan, Belgium, Bulgaria, Czech Republic, China, Denmark, France, Greece, Georgia, Germany, Hungary, Iran, Italy, Kazakhstan, Mongolia, Poland, Romania, Russia, Slovakia, Sweden, Switzerland, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan, Yugoslavia (Kertész 1908; Pleske 1925b; Séguy 1926; Lindner 1938; Rozkošný 1973; Dušek & Rozkošný 1974; Nartshuk 1976; Rozkošný 1983; Nartshuk 1988; Rozkošný and Nartshuk 1988; Woodley 2001; Üstüner et al. 2002).

*3.1.3.1.1. Oxycera quadrilineata* Üstüner and Hasbenli, 2007

*Material Examined*: Turkey: 3♀♀, Konya, Taskent, Beyreli Village, Gevne Valley, elev.1450 m, 06: VII 2019 (Fig.2.7; Fig.3.21).

*Distribution in Turkey*: Bayburt, Sivas (Demirözer et al. 2017; Üstüner and Hasbenli 2007; Üstüner et al. 2014).

*General Distribution*: Palearctic Region: Turkey (Üstüner and Hasbenli 2007).

*3.1.3.2. Oplodontha* Rondani, 1863

*3.1.3.2.1. Oplodontha viridula* (Fabricius 1775)

*Material Examined*: Turkey: 6♀♀, Konya, Taskent, Avsar Village, Gevne Valley, elev. 1750 m, 06.VII 2020. 2♂♂, 1♀♀, Konya, Hadim, Tosmur Plateau, Gevne Valley, elev. 1970 m, 07.VII 2020. 2♂♂, 7♀♀, Konya, Taskent, Avsar Village, Gevne Valley, elev. 1730 m, 08.VII 2020 (Fig.2.8,9; Fig.3.22,23).

*Distribution in Turkey*: Adana, Antalya, Bayburt, Burdur, Erzincan, Erzurum, Hatay, Isparta, Kayseri, Konya, Sivas, Trabzon (Demirözer et al. 2017; Rozkošný and Nartshuk 1988; Woodley, 2001; Üstüner and Hasbenli 2002; Üstüner 2005; Üstüner and Hasbenli 2013).

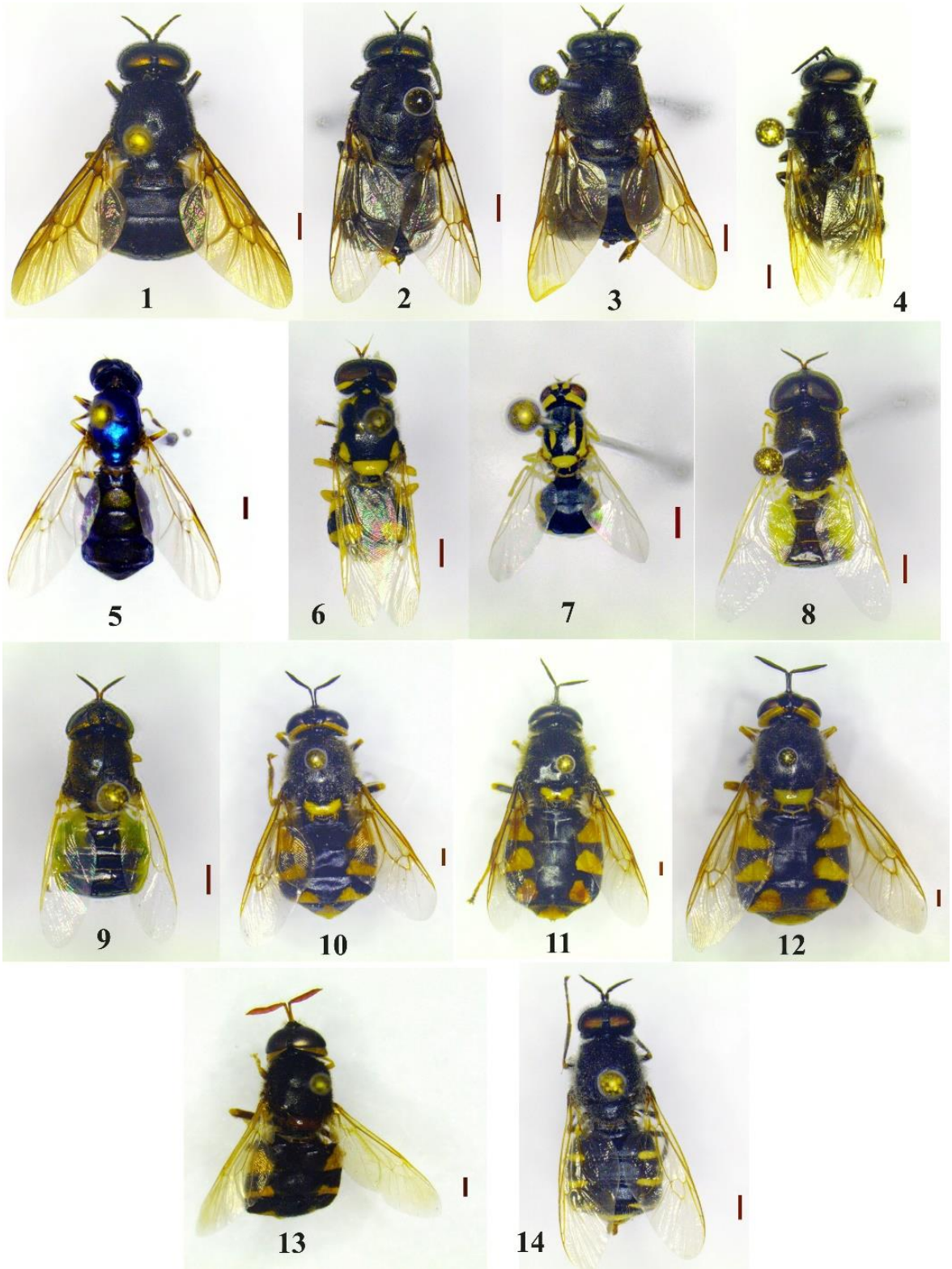
*General Distribution*: Palearctic Region: Albania, Algeria, Austria, Belgium, Bulgaria, Czech Republic, China, Denmark, England, Finland, France, Greece, Germany, Hungary, Iraq, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Netherlands, Mongolia, Morocco, Norway, Poland, Romania, Russia, Sardinia, Slovakia, Spain, Sweden, Switzerland, Turkey, (Kertész 1908; Pleske 1925c; Séguy 1926; Lindner 1938; Mason et al. 2009; Rozkošný 1973; Lindner, 1974; Nartshuk 1976; Rozkošný 1982; Nartshuk 1988; Rozkošný and Nartshuk 1988; Fleck and Greve 1990; Yimlahi et al. 2017; Woodley 2001).

*3.1.3.3. Stratiomys* Geoffroy, 1762

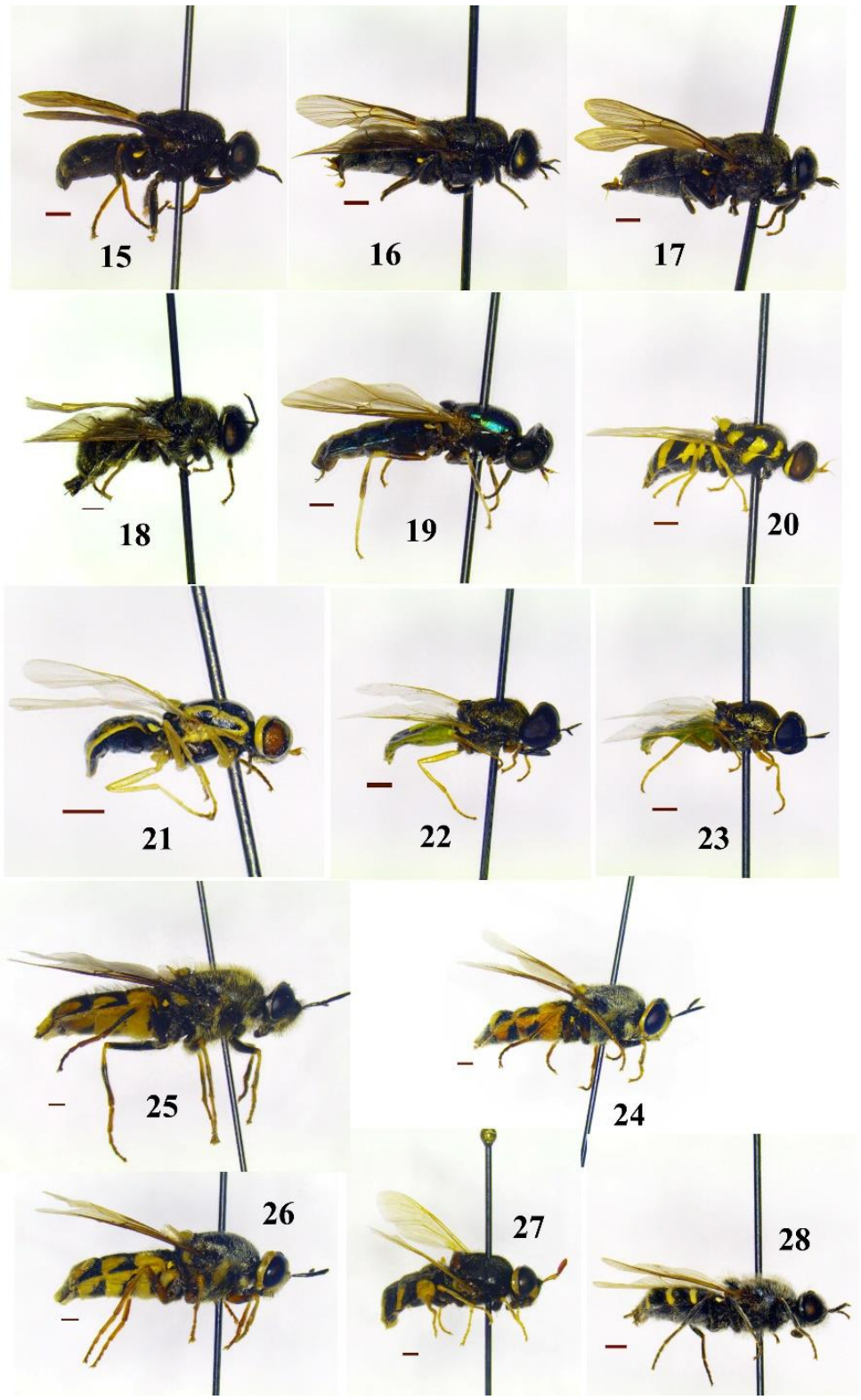
*3.1.3.3.1. Stratiomys cenisia* Meigen, 1822

*Material Examined:* Turkey: 1♀, Konya, Taskent, Avsar Village, Gevne Valley, elev. 1750 m, 06.VII 2020 (Fig.2.10; Fig.3.24).

*Distribution in Turkey*: Antalya, Bayburt, Burdur, Erzurum, İzmir, Mugla, Mersin (Demirözer et al. 2017; Rozkošný 1982; Üstüner and Hasbenli 2002).




**Figures 2.** 1. *Adoxomyia aureovittata*; 2–3. *Adoxomyia obscuripennis;* 4. *Pycnomalla splendens*; 5. *Chloromyia speciosa*; 6. *Oxycera meigenii*; 7. *Oxycera quadrilineata*; 8,9. *Oplodontha viridula*; 10. *Stratiomys cenisia*; 11–12. *Stratiomys chamaeleon*; 13. *Stratiomys ruficornis*; 14. *Lasiopa pseudovillosa*.




**Figures 3.** 15. *Adoxomyia aureovittata*; 16,17. *Adoxomyia obscuripennis;* 18. *Pycnomalla splendens*; 19. *Chloromyia speciosa*; 20. *Oxycera meigenii*; 21. *Oxycera quadrilineata*; 22,23. *Oplodontha viridula*; 24. *Stratiomys cenisia*; 25,26. *Stratiomys chamaeleon*; 27. *Stratiomys ruficornis*; 28. *Lasiopa pseudovillosa*.

*General Distribution*: Palaearctic Region: Algeria, Armenia, Austria, Bulgaria, Czech Republic, Cyprus, Egypt, France, Germany, Hungary, Iran, Israel, Italy, Kazakhstan, Morocco, Poland, Romania, Russia, Slovakia, Spain, Syria, Tunisia, Turkey, Turkmenistan, Ukraine, Yugoslavia (Pleske 1889; Kertész 1908; Pleske 1924; Séguy 1926; Lindner 1938; Rozkošný 1982; Nartshuk 1988; Rozkošný and Nartshuk 1988; Woodley 2001).

*3.1.3.3.2. Stratiomys chamaeleon* (Linnaeus, 1758)

*Material Examined*: Turkey: 2♂♂, 1♀, Konya, Taşkent, Avşar Village, Gevne Valley, elev. 1750 m, 06.VII 2020. 3♂♂, 3♀♀, Konya, Taşkent, Avşar Village, Gevne Valley, elev. 1730 m, 08.VII 2020 (Fig.3.11,12; Fig.3.25,26).

*Distribution in Turkey*: Artvin, Antalya, Burdur, Erzurum, Kayseri, Konya, Sivas (Demirözer et al., 2017; Rozkošný 1982; Rozkošný and Nartshuk 1988; Üstüner and Hasbenli 2002; Üstüner 2005; Üstüner and Hasbenli 2013).

*General Distribution*: Palearctic Region: Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Czech Republic, China, Denmark, England, France, Georgia, Germany, Greece, Hungary, Italy, Kazakhstan, Lithuania, Netherlands, Poland, Romania, Russia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Yugoslavia (Pleske 1889; Kertész 1908; Séguy 1926; Lindner 1938; Nartshuk 1968; Rozkošný 1973; Rozkošný 1982; Nartshuk 1988; Rozkošný and Nartshuk 1988; Woodley 2001).

*3.1.3.3.3. Stratiomys ruficornis* (Macquart, 1838)

*Material Examined*: Turkey: 1♂, Konya, Taskent, Beyreli Village, Gevne Valley, elev. 1450 m, 20.VI 2019 (Fig.3.13; Fig.4.27).

*Distribution in Turkey*: Agri, Ankara, Artvin, Burdur, Bursa, Erzincan, Erzurum, Isparta, Kars, Konya (Aksehir), Malatya, Mersin, Sultan Mountains (Demirözer et al. 2017; Lindner 1938; Rozkošný 1982; Rozkošný and Nartshuk 1988; Woodley 2001; Üstüner and Hasbenli 2002; Üstüner 2005; Üstüner and Hasbenli 2013).

*General Distribution*: Palaearctic Region: Albania, Armenia, Austria, Azerbaijan, Bulgaria, Croatia, Czech Republic, France, Greece, Hungary, Iran, Iraq, Lebanon, Poland, Romania, Russia, Slovakia, Syria, Turkey, Yugoslavia (Kertész 1908; Séguy 1926; Lindner 1938; Nartshuk 1988; Rozkošný 1982; Rozkošný and Nartshuk 1988; Woodley 2001).

*3.1.4.* Nemotelinae

*3.1.4.1. Lasiopa* Brullé, 1833

*3.1.4.1.1. Lasiopa pseudovillosa* Rozkošný, 1983

*Material Examined*: Turkey: 2♂♂, Konya, Taskent, Beyreli Village, Gevne Valley, 1450 m, 19.VI 2019 (Fig.2.14; Fig.3.28).

*Distribution in Turkey*: Alanya, Burdur, Isparta, Konya (Demirözer, et al., 2017; Üstüner and Hasbenli, 2014).

*General Distribution*: Palaearctic Region: Iran, Italy, Switzerland, Turkey (Rozkošný 1983; Woodley 2001; Rozkošný 2012, Mason 2013; Üstüner and Hasbenli 2014).

## 4. Discussion

Turkey is located at an important crossroads of the confluence of Europe, Asia and Africa Continents. The species herein presented can be observed both in Africa, Asia and in Europe, including Turkey. In the country, there are transition corridors that act as a bridge through which living species cross between these three continents, generally high mountain ranges act as barriers that restrict the distribution of species, and isolated areas serve as refugium. At the same time, the country is also rich in biodiversity because it has different climatic zones. Gevne Valley is one of the Important Natural Areas (INA) in Turkey.

The Gevne Valley is an isolated area in the Mediterranean region in Turkey. As a result of the research, it has been shown that the Gevne Valley is an important zoogeographic region where Stratiomyidae species originating from Europe, Asia and Africa can be distributed, although it is an isolated the area.

*Adoxomyia aureovittata* and *Adoxomyia obscuripennis* previously detected in Gevne Valley are examples of the species that have been found again in this study. Until now, *Adoxomyia aureovittata* is only known from Turkey and Greece. According to its zoogeographical distribution, the species is a Mediterranean element. The presence of *A. aureovittata* in Valley Gevne in the south of Turkey is a possible outcome. Nartshuk's study (2009) on the zoogeographical range of Stratiomyidae species in Eastern Europe, specified the *A. obscuripennis* known from Kazakhstan, Uzbekistan, Russia and Tajikistan as the Caucasian-Central Asian species. *A. obscuripennis* from Gevne Valley in the south of Turkey was detected by Üstüner in 2011. In this study, the existence of *A. obscuripennis* in the same area has been once again determined. Thus, according to the results of this study, it is certain that *A. obscuripennis* has been distributed in Anatolia. According to the map designed by Rozkosny (1980) where the zoogeographic distribution areas of the European Stratiomyidae species, *A. obscuripennis* is a truly Turan zoogeographic element. However, according to the finding we obtained from the research, it can can also be characterized as an eastern Mediterranean zoogeographic element. Until now, *A. aureovittata* and *A. obscuripennis* species have been found only in Gevne Valley in the south of Turkey.

In Turkey, *Pycnomalla splendens* has been distributed from south to northeast, bordering the Caucasus. When the entire distribution area is examined, the species have been distributed in countries with a coastline to the Mediterranean, even up to Transcaucasia (known from a record in Armenia). In this study, the distribution of *P. splendens* is expanded and reaches southwestern Turkey.

*Chloromyia speciosa* found in Gevne Valley is widely distributed in most areas of Europe, and within the borders of the Palaearctic Region of Asia and Africa. The species is a Palaearctic zoogeographic element. Considering distribution in the palearctic, it is a possibility that *C. speciosa* is found in the Gevne Valley. Until now, *C. speciosa* have been known to show the distribution in the north of Turkey. Accordingly, its presence in the Gevne Valley in the south of Turkey is a very interesting result.

Species belonging to the genera *Oxycera*, *Oplodontha*, *Stratiomys* have been found in Gevne Valley. *Oxycera meigenii* is known in Europe and Asia. Regarding the range of the species in the Palaearctic Region, the westernmost border is in France, in Europe, the easternmost borders are Afghanistan, China and Mongolia in Asia, the northernmost borders are Germany and Sweden, in Europe and also Kazakhstan in Asia, and the southernmost borders are in the Mediterranean countries Italy, Greece, and Turkey. *O. meigenii* is a Palaearctic element. The species have been known for distribution from the south of Turkey (Alanya, Isparta) to Central Anatolia and Eastern Anatolia. It is a possible result that the species have been discovered for the first time in Gevne Valley.

*Oxycera quadrilineata* is only known in Turkey. Up to now, the species has been reported from the Central and the Eastern Anatolia parts of Turkey. As a result of this research, it has been found for the first time in the Gevne Valley. These findings have expanded the known distribution limits of the species to southern Turkey as well. Regarding to what we know about *O. quadrilineata*, it can be considered an Eastern Mediterranean element, since it has been found only in Anatolia.

*Oplodontha viridula, Stratiomys cenisia* and *Stratiomys chamaeleon* in Gevne Valley can be found in meadows, on the edge of still water in the higher parts of the valley. *Oplodontha viridula* is well distributed in Europe, Asia and North Africa. The species is also widely distributed in Turkey, but it is only now recorded in Gevne Valley. *Stratiomys cenisia*, also a Palaearctic element, is distributed in Europe, Asia (its eastern borders extend to Siberia and Mongolia) and North Africa. In Turkey, the species is distributed in western (Izmir), south (Antalya, Burdur, Bursa, Mersin) and eastern areas (Bayburt, Erzurum), and it is recorded for the first time from the Gevne Valley.

*Stratiomys chamaeleon* is widely distributed in Europe and it is also found in Siberia and China. Now, Turkey is the southernmost border where this species is distributed in the Palaearctic Region. The species has been distributed in southern Turkey, and in parts of central and northeast Anatolia. *S. chamaeleon* is recorded from Gevne Valley for the first time.

*Stratiomys ruficornis* is distributed in Asia from the Caucasus to the Middle East and also in Central Europe. Therefore, the species is present throughout the Palaearctic area, except in North Africa, and it can be then characterized as a Palearctic element. The species is widely distributed in Turkey as well, being also found in the Gevne Valley.

*Lasiopa pseudovillosa* is known in Italy and Switzerland in Europe. So, the species can be characterized as a sub-Mediterranean element. The species is also found in Turkey and Iran. Therefore, the species can also be characterized as an Iranian-Anatolian element. The species can be characterized as a Mediterranean element since it is within the limits of the distribution of Mediterranean elements.

## 5. Conclusions

In this study, the Gevne Valley's Stratiomyidae fauna have been determined in the Gevne Valley, which is a very isolated area. It is important to conduct similar faunistic studies at certain intervals in the future to monitor these species.

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**References**

Alexiou S, Arens W, Hauser M (2020). Adoxomyia aureovittata (Diptera, Stratiomyidae), new record for Greece and Europe. *Parnassiana* 8: 141-142.

Demirel E, Üstüner T (2019). New records for Stratiomyidae (Diptera) from Ordu and Hatay provinces in Turkey. *Journal of the Entomological Research Society* 21(3) 323-331.

Demirözer O, Üstüner T, Hayat R., Uzun A (2017). Contribution to the Knowledge of the Stratiomyidae (Diptera) Fauna of Turkey. *Entomological News* 126, 252-273.

Dušek J, Rozkošný R (1974). Revision mitteleuropäischer Arten der Familie Stratiomyidae (Diptera) mit besonderer Berücksichtigung der Fauna der CSSR V. Gattung Oxycera Meigen. *Acta Entomologica Bohemoslovaca* 71: 322–341.

Fleck M, Greve L (1990). Records of Stratiomyidae (Diptera) from South-Eastern Norway, with som notes on the species. *Fauna norvegica* Seri B. 37: 101–104.

Hurkmans W, Hayat R, Özbek H (1997). Insects and plants of a marsh at Küçükgeçit, Aşkale, Erzurum, Turkey: A preview on preservation. *Turkish Journal of Entomology* 21(2): 95-108.

Kertész C (1908). Orthorrhapha Brachycera. Stratiomyiidae. In: *Catalogus Dipterorum Hucusque Descriptorum* 3: 1–137.

Kertész, K (1923). Vorarbeiten zu einer Monographie der Notacanthen. *XLV-L. Annales Musei Nationalis Hungarici* 20: 85–129.

Koçak AÖ, Kemal M (2013). Diptera of Turkey. *Priamus (Suppl.)* 28: ii+ 1-411.

Lindner E (1931). Einige von Dr. Erich Schmidt und Prof. Dr. Franz Werner in Algerien und Marokko gesammelte Dipteren (Stratiomyidae, Rhagionidae, Nemestrinidae). *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin* 1931: 203–206.

Lindner E (1938). 18. Stratiomyiidae. In: Lindner E. (Ed.), *Die Fliegen der Palaearktischen Region*, 4(1):1–218.

Lindner E (1974). On the Stratiomyidae (Diptera) of The Near East. *Israel Journal of Entomology* 9: 93–108.

Mason F, Rozkosny R, Hauser M (2009). A review of the soldier flies (Diptera: Stratiomyidae) of Sardinia. *Zootaxa* 2318: 507-530.

Mason F, (2013). Updated Italian checklist of Soldier Flies (Diptera, Stratiomyidae). *ZooKeys* 336: 61–78. doi: 10,3897/zookeys.336.6016.

Nartshuk EP (1968). On synonymy of two European species of Stratiomyidae (Diptera). *Vestnik zoologii* 2: 76–77.

Nartshuk EP (1976). New data on the fauna of Stratiomyidae (Diptera) of the Mongolian People's Republic. *Nasekomiye Mongolii* 4: 461–471.

Nartshuk EP (1988). 36. Family Stratiomyidae. In: *Keys to the Insects of the European Part of the USSR* G. Ya. Bei-Bienko (Ed.) 5 (2): 701–738.

Nartshuk EP (2009). The character of soldier fly distribution (Diptera, Stratiomyidae) in Eastern Europe. *Entomological Review* 89, 46–55. https://doi.org/10.1134/S0013873809010072

Pleske T (1899). Beitrag zur Kenntniss der Stratiomyia- Arten aus dem europäisch-asiatischen Theile der palaearctischen Region II. Theil. *Weiner Entomologische Zeitung* 18(9): 225–278.

Pleske T (1924). Etudes sur les Stratiomyiinæ de la Région Paléarctique- II. Revue des espéces paléarctiques de la sous-famille des Pachygastrinae. In: *Encyclopédie Entomologique, Série B Diptera,* Lechevalier, P. (Ed.), 1(2): 95–103.

Pleske T (1925a). Etudes sur les Stratiomyiinæ de la Région Paléarctique- III. Revue des espéces paléarctiques de la sous-famille des Clitellariinae. In: *Encyclopédie Entomologique, Série B Diptera*, Lechevalier, P. (Ed.), 1(3): 105–119.

Pleske T (1925b). Etudes sur les Stratiomyiinæ de la Région Paléarctique- III. Revue des espéces paléarctiques de la sous-famille des Clitellariinae. In: *Encyclopédie Entomologique, Série B Diptera*, Lechevalier, P. (Ed.), 1(4): 165–188.

Pleske T (1925c). Etudes sur les Stratiomyiinae de la Région Palaéarctique- Les espèces paléarctiques du genre Eulalia Meigen. *Encyclopédie Entomologique, Série B, Diptera* 2(1): 25–40.

Rozkošný R (1973). The Stratiomyioidea (Diptera) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica*, 140 pp.

Rozkošný R (1980). Zoogeography of the European Stratiomyidae (Diptera). *Acta Universitatis Carolinae-Biologica* 1977: 387-396.

Rozkošný R (1982). *A Biosystematic study of the European Stratiomyidae (Diptera)- vol.1: Introduction, Beridinae, Sarginae and Stratiomyinae, Series Entomologica* 21: 401 pp., The Hague: Dr.W. Junk.

Rozkošný R (1983). *A Biosystematic study of the European Stratiomyidae (Diptera)- vol.2: Clitellariinae, Hermetiinae, Pachygasterinae and bibliography, Series Entomologica 21: 431 pp.,* The Hague: Dr.W. Junk.

Rozkošný R, Nartshuk EP (1988). Stratiomyidae. In: *Catalogue of Palaearctic Diptera*, Soos, A. and Papp, L. (Ed.), 5: 42–96, Budapest: Akadémiai Kiado&Amsterdam.

Rozkošný R (2012). Fauna Europaea: Stratiomyidae. In: Pape T, Beuk P. (Eds) *Fauna Europaea: Diptera Brachycera. Fauna Europaea version 2,5*. http://www.faunaeur.org.

Séguy E (1926). Diptéres (Brachycéres)- F. Stratiomyiidae. In: *Fauna de France* 13: 1–80.

Üstüner T, Hasbenli A, Aktümsek A (2002). Contribution to Subfamily Clitellariinae (Diptera, Stratiomyidae) Fauna of Turkey. *Journal of the Entomological Research Society* 4(1): 19–24, Ankara.

Üstüner T (2005). Tahtalı Dağları'ndan (Kayseri-Adana-Sivas / Türkiye) Stratiomyinae Altfamilyasına (Diptera: Stratiomyidae) Katkılar. *Selçuk Üniversitesi Fen-Edebiyat Fakültesi Fen Dergisi* 25: 107-112.